

In the Specification:

Please amend the specification as set forth below.

Please amend the paragraph at page 3, lines 9-12 as set forth below:

It is possible that the processing liquid tank comprises a baffleplate baffle plate for partitioning the interior of the processing tank in an upper part and a lower part, the baffleplate baffle plate being positioned upper of the pipe and the straightening vane; and an outlet pipe for drawing the processing liquid below the baffleplate baffle plate out of a region inner or outer of the straightening vane without mixing the processing liquid below the baffleplate baffle plate with the processing liquid upper of the baffleplate baffle plate. It is preferable that the baffleplate baffle plate is fixed to the inner cylinder or to the inside wall of the processing liquid tank, and the straightening vane is fixed to the baffleplate baffle plate. It is possible that the baffleplate baffle plate is tilted, and the outlet pipe is disposed in the higher part of the baffleplate baffle plate.

Please amend the paragraph at page 11, lines 25-33 as set forth below:

As shown in FIGs. 3 and 4, a cylindrical straightening vane 140 for forming a flow passage of the chemical liquid is provided around the inner cylinder 130. A baffleplate baffle plate 150 for partitioning the interior of the chemical liquid tank 100 in the upper part and the lower part is jointed to the outer circumferential surface of the inner cylinder 130. A gap G1 is defined along the inside circumferential surface of the inner cylinder 100a between the outer circumferential edge of the baffleplate baffle plate 150

and the inside circumferential surface of the inner cylindrical wall
100a.

Please amend the paragraph at page 11, line 34 through page 12, line 9 as set forth below:

The straightening vane 140 is positioned below the baffleplate baffle plate 150 with the upper end jointed to the underside of the baffleplate baffle plate 150. A gap G2 is defined between the lower end of the straightening vane 140 and the bottom surface 100b of the chemical liquid tank 100. The straightening vane 140 is formed inner of the outer circumferential edge of the baffleplate baffle plate 150. That is, the region S4 upper of the baffleplate baffle plate 150 and the region S5 outer of the straightening vane 140 are communicated with each other through the gap G1, and the region S5 outer of the straightening vane 140 and the region S6 inner of the straightening vane 140 shown in FIG. 4 are in communication with each other through the gap G2. The region S6 inner of the straightening vane 140 is closed at the top by the baffleplate baffle plate 150.

Please amend the paragraph at page 12, lines 10-18 as set forth below:

The chemical liquid tank 100, the straightening vane 140 and the baffleplate baffle plate 150 are made of PER (tetrafluoroethylene perfluoroalkylvinylether copolymer). In this case, the liquid contacting surfaces, which contact chemical liquids, have chemical liquid resistance, and there is no risk of metal contamination of the wafers W. Making them of PFA can lower the costs in comparison with making them of a metal, such as SUS steel or others and

further making a surface treatment for suppressing the elution of the metal.

Please amend the paragraph at page 12, lines 19-32 as set forth below:

The chemical liquid recovery line (inlet pipe) 115 described above is passed through the cap 100c, and introduces used chemical liquid into the chemical liquid tank 100 and injects the used chemical liquid into the region S4 upper of the baffleplate baffle plate 150. The chemical supply line (outlet pipe) 105 described above is passed through the cap 100c and the baffleplate baffle plate 150 and is opened in the underside of the baffleplate baffle plate 150 to draw the chemical liquid near the underside of the baffleplate baffle plate 150 out of the region S6 inner of the straightening plate 140. Because the region S4 upper of the baffleplate baffle plate 150 and the region S6 inner of the straightening plate 140 are separated by the baffleplate baffle plate 150, the chemical liquid supply line (outlet pipe) 105 can lead out the chemical liquid below the baffleplate baffle plate 150 without being mixed with the chemical liquid upper of the baffleplate baffle plate 150.

Please amend the paragraph at page 12, line 33 through page 13, line 9 as set forth below:

When a chemical liquid is stored up to a height (liquid surface height L) near the downstream end (entrance of the chemical liquid) of the chemical liquid recovery line (inlet pipe) 115, the baffleplate baffle plate 150 and the straightening vane 140 are immersed in the chemical liquid. Because the region S4 upper of the baffleplate baffle plate 150 and the region S6 inner of the

straightening vane 140 are separated by the ~~baffleplate baffle plate~~ 150, the chemical liquid in the region S4 and the chemical liquid in the region S6 do not mix with each other. An air vent 155 is passed through the ~~baffleplate baffle plate~~ 150 from the upper surface to the underside, so that when a chemical liquid is stored up to a position higher than the ~~baffleplate baffle plate~~ 150, no gas stagnates upper in the region S6. The downstream end of the chemical liquid recovery line (inlet pipe) 115 is positioned upper of the chemical liquid surface.

Please amend the paragraph at page 13, lines 15-19 as set forth below:

As shown in FIG. 6, the three pipes 160a, 160b, 160c are respectively passed through the cap 100c of the chemical liquid tank 100 and, as shown in FIG. 7, are passed respectively through parts of the ~~baffleplate baffle plate~~ 150 which are inner of the straightening vane 140 to be inserted in the region S6.

Please amend the paragraph at page 13, line 20 through page 14, line 3 as set forth below:

Below the ~~baffleplate baffle plate~~ 150, the 3 pipes 160a, 160b, 160c are juxtaposed substantially in parallel with each other in the stated order and are spaced from each other substantially at a certain interval. The 3 pipes 160a, 160b, 160c are arranged helically along the inner cylinder 130 and the straightening vane 140 from a position near the underside of the ~~baffleplate baffle plate~~ 150 to the lower end of the straightening vane 140. That is, in the region S6 inner of the straightening vane 140, the 3 pipes 160a, 160b, 160c are formed helical away from the center of chemical liquid tank 100, juxtaposed with each other in the stated order.

Innermost with respect to the outside circumferential surface of the inner cylinder 130, the pipe 160a is formed helically around the outside circumferential surface of the inner cylinder 130, spaced from each other at a substantially certain interval. Outer of the pipe 160a, the pipe 160b is formed helically, spaced from the pipe 160a at a substantially set interval. Outer of the pipe 160b, the pipe 160c is formed helically, spaced from the pipe 160b at a substantially set interval. Thus, as shown in FIG. 4, in the region S6, the helix of the pipe 160a, the helix of the pipe 160b and the helix of the pipe 160 are stacked in the stated order from the inside, forming triple helixes.

Please amend the paragraph at page 14, lines 24-32 as set forth below:

As shown in FIG. 5, in the region 55, the 3 pipes 160a, 160b, 160c are wound up to an upper part of the straightening vane 140 and then, near the underside of the baffleplate baffle plate extended toward the underside of the baffleplate baffle plate 150, curved upward toward the underside of the baffleplate baffle plate 150.

Further, as shown in FIG. 7, the pipes 160a, 160b, 160c are passed through the part of the baffleplate baffle plate 150 which is outer of the straightening vane 140 and, as shown in FIG. 6, are respectively passed through the cap 100c of the chemical liquid tank 100.

Please amend the paragraph at page 15, lines 13-21 as set forth below:

The straightening vane 140, the baffleplate baffle plate 150, the 3 pipes 160a, 160b, 160c and the support member are integrally supported by the inner cylinder 130. As described above the inner cylinder 130 is jointed to the cap 160c. When the chemical liquid

tank 100 is assembled, the straightening vane 140, the ~~baffleplate~~ baffle plate 150, the 3 pipes 160a, 160b, 160c and the support member are arranged around the inner cylinder 130 and then inserted into the cylindrical wall 100a integrally, and the opening in the top of the cylindrical wall 100a is closed by the cap 100c.

Please amend the paragraph at page 17, line 18 through page 18, line 10 as set forth below:

On the other hand, the chemical liquid discharged from the inner chamber 6 to be recovered is led into the chemical liquid tank 100 through the chemical liquid recovery line (inlet pipe) 115 and into the upper region S4 upper of the ~~baffleplate~~ baffle plate 150, bypasses the ~~baffleplate~~ baffle plate 150, passing through the gap G1 and flows into the region S5 between the cylindrical wall 100a and the straightening vane 140. In the region S5, the chemical liquid descends in the region S5 along the outside of the straightening vane 140, passing around the 3 pipes 160a, 160b, 160c vertically arranged. Meanwhile the chemical liquid is heated by the heat medium by the heat conducted via the pipes 160a, 160b, 160c and has the temperature gradually increased. At the lower part in the region S5, the chemical liquid bypasses the lower end of the straightening vane 140, passes through the gap G2 to flow into the region S6 between the inner cylinder 130 and the straightening vane 140. In the region S6, the chemical liquid passes through the gaps defined between the respective 3 pipes 160, 160b, 160c, which are arranged side by side to ascend in the region S6 along the inside of the straightening vane 140 toward the underside of the ~~baffleplate~~ baffle plate 150. Meanwhile the chemical liquid is heated by the heat of the heat medium conducted via the pipes

160a, 160b, 160c to have the temperature gradually increased. At an upper part in the region S6, the chemical liquid which has been heat exchanged is led out at below the ~~baffleplate~~ baffle plate 150 through the chemical liquid supply line (outlet pipe) 105. As described above, in the chemical liquid tank 100, the ~~baffleplate~~ baffle plate 150, the straightening vane 140, the chemical liquid supply line (outlet pipe) 105 lead a chemical liquid to form a flow passage of the chemical liquid, in which the chemical liquid flows sequentially in the region S4, the region S5 and the region S6.

Please amend the paragraph at page 20, line 37 through page 21, line 11 as set forth below:

Furthermore, the pipes of PFA, whose radius of curvature is restricted, are arranged helical, whereby a surface area required for the temperature adjustment of a chemical liquid can be provided. The chemical liquid tank 100, and the pipes 160a, 160b, 160c, the straightening vane 140, the ~~baffleplate~~ baffle plate 150, the support member, etc., which are arranged in the chemical liquid tank 100, are made of PEA, and accordingly the liquid contact surfaces to which a chemical liquid contacts in the chemical liquid tank 100 has chemical liquid resistance, whereby there is not risk of metal contamination which contaminates wafers W, and costs can be lower in comparison with the case in which a surface treatment for suppressing elution of metals to SUS steel, etc.

Please amend the paragraph at page 21, line 37 through page 22, line 9 as set forth below:

The chemical liquid tank 100, the straightening vane 140, the ~~baffleplate~~ baffle plate 150, the pipes 160a, 160b, 160c, the support

member are made of PEA but may be made of other chemical liquid resistance, such as fluorine plastics, etc. As long as their liquid contact surfaces are formed of a chemical liquid resistant resin, their liquid contact surfaces maybe coated with, e.g., chemical liquid resistant resins to be made chemical liquid resistant, and in this case as well, the processing liquid tank and the heat exchanger can take smaller spaces, and there is not risk of the metal contamination which contaminates wafers.

Please amend the paragraph at page 22, lines 21-31 as set forth below:

In the present embodiment, the pipes 160a, 160b, 160c are arranged helically in the region S5 outer of the straightening vane 140 and the region S6 inner of the ~~baffleplate 140~~ baffle plate 150. However, the pipes 160a, 160b, 160c are not formed helically in the region S5 outer of the straightening vane 140 but formed helically only in the region S6 inner of the ~~baffleplate 140~~ baffle plate 150, where the chemical liquid ascends. In this case as well, the pipes 160a, 160b, 160c are disposed in a region where the chemical liquid supply line (outlet pipe) 105 is disposed at an upper part, whereby the heated chemical liquid can ascend to be led to the chemical liquid supply line (outlet pipe) 105.

Please amend the paragraph at page 22, line 32 through page 23, line 24 as set forth below:

In the present embodiment, a chemical liquid descends along the outside of the straightening vane 140, passes between the lower part of the straightening vane 140 and the bottom surface of the chemical liquid tank 100, and then ascends along the inside of the straightening vane 140. That is, the flow passage of a chemical

liquid having the outer part of the straightening vane 140 as the upstream and the inner part of the straightening vane 140 as the downstream has been explained. However, as shown in FIG. 9, the flow passage of a chemical liquid, in which a chemical liquid descends along the inside of the straightening vane 140 and then ascends along the outside of the straightening vane 140, i.e., the inner part of the straightening vane 140 is the upstream, and the outer part of the straightening vane 140 is the downstream may be formed. For example, the baffleplate baffle plate 150 in an annular shape is fixed to the inside wall of the chemical liquid tank 100, i.e., the inside circumferential surface of the cylindrical wall 100a with a gap G1' defined between the inner circumferential edge of the baffleplate 140 baffle plate 150 and the outside circumferential surface of the inner cylinder 130. The straightening vane 140 is fixed to the underside of the baffleplate baffle plate 150. The region S4' upper of the baffleplate baffle plate 150 and the region S6' inner of the straightening vane 140 are in communication with the gap G1', and the region S6' inner of the straightening vane 140 and the region S5' outer of the straightening vane 140 are in communication with the gap G2. The region S5' outer of the straightening vane 140 is closed at the top by the baffleplate baffle plate 150. The chemical liquid supply line (outlet pipe) 105 is opened in the underside of the baffleplate baffle plate 150 to draw the chemical liquid near the underside of the baffleplate baffle plate 150 out of the region S5', which is outer of the straightening vane 140.

Please amend the paragraph at page 23, lines 25-35 as set forth below:

A chemical liquid is led into the chemical liquid tank 10 through the chemical liquid recovery line (inlet pipe) 115, bypasses the ~~baffleplate baffle plate~~ 150 to pass through the gap G1' and flows into the region S6', descends in the region S6', bypasses the underside of the straightening vane 140 to pass through the gap G2 and flows into the region S5', ascends toward the underside of the ~~baffleplate baffle plate~~ 150 in the region S5', and is led out from below the ~~baffleplate baffle plate~~ 150 at an upper part in the region S5' through the chemical liquid supply line (outlet pipe) 105. The flow passage of a chemical liquid, which sequentially passes through the regions S4, S6', S5' in the chemical liquid tank 100 is thus formed.

Please amend the paragraph at page 26, lines 27-35 as set forth below:

As shown in FIG. 11, it is possible that the ~~baffleplate baffle plate~~ 150 is tilted so that the chemical liquid supply line 105 and the air vent hole 155 can be opened upper of the ~~baffleplate baffle plate~~ 150. In this case, the stagnation of air bubbles below the ~~baffleplate baffle plate~~ 150 can be effectively prevented. When the chemical liquid is drained at a lower part of the chemical liquid tank 100, the tiled top surface of the ~~baffleplate baffle plate~~ 150 facilitates the drop of the chemical liquid, whereby the chemical liquid is prevented from remaining upper of the ~~baffleplate baffle plate~~ 150.